Book Review

Mass Spectrometry of Lipids

Robert C. Murphy
Handbook of Lipid Research No. 7
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This book represents a serious and successful attempt at gathering in a single reference-type volume practically all of the significant work carried out to date on the mass spectrometric analysis of lipids. However, the broad title could be misleading, as the author himself acknowledges in the Preface. To cover all the known lipid classes would have been an impossible task both for the author as well as for the reader. Thus, the book concentrates on fatty acids and fatty acyl-containing lipids, reflecting topics on which Murphy has had a personal research interest over the years. For this purpose, the author presents his and other colleagues' work in this field in a total of eight information packed chapters.

The first three chapters deal with a concise and informative introduction to mass spectrometry, covering mass analyzers and tandem mass spectrometry, different ionization techniques up to and including a brief account of electrospray but focusing mainly on those which have been more relevant in the field (electron and chemical ionization). Finally, sample introduction techniques are considered, including a discussion of interfaces and derivatization.

After this introductory 70 page section, chapter 4 provides a detailed account of fatty acid mass spectrometry. It covers in a rather comprehensive way all there is to know on the structurally informative fragmentation mechanisms of free and derivatized saturated, unsaturated, oxygen functionalized, alkyl substituted mono and dicarboxylic acids. This is followed by another detailed chapter on eicosanoids with specialized sections on prostaglandins, hydroxyeicosanoic acids, and leukotrienes. Both of these chapters contain complete mass spectra as well as detailed fragmentation schemes nicely complementing and expanding the wealth of information already available in the literature in the form of an exhaustive compilation—but no interpretation and discussion—of more than 700 spectra of eicosanoids and related compounds (Pace-Asciak, *Adv. Prostagl., Thromb. and Leukotriene Res.*, Vol. 18, Raven Press, NY, 1989).

The final three chapters are devoted to a discussion of mass spectra of triacyl-, diacyl-, and monoacylglycerols (chapter 6), glycerophospholipids (chapter 7), and sphingolipids (chapter 8). Again, the discussion is supported by the presentation of full spectra and fragmentation schemes, some accepted and others suggested in light of the available experimental data.

Altogether the book contains more than 280 pages with sufficient data and references to be of use in the teaching of mass spectrometry and to become a highly recommended standard reference text for anybody interested in this subject.

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